conversion to isoprene. Results with mixtures obtained by dehydrogenation of isopentane over an Al-Cr catalyst were similar to those with synthetic mixtures. Full analysis showing effect of flow rate and temperature is given. The degree of conversion decreases with increasing flow rate. The kinetics of the reaction were investigated in the 530 to 580°C range with a steam dilution ratio of 1:2 and hourly flow rates of 5200 to 7000 g/litre catalyst/hour. Reaction rate is given by equation of the following type

$$\frac{dx}{dx} \quad K \frac{|A_1|}{[A_1|+z_2|A_2|+z_3[A_3|} \qquad (1)$$

The adsorption coefficients z were determined experimentally by measuring the rate of dehydrogenation of binary mixtures of the starting material and the reaction products and were calculated from

$$z_1 = \frac{\frac{m_0}{m} - 1}{\frac{100}{p} - 1} \qquad (2)$$

Catalytic dehydrogenation ...

where m_o - number of mols of reaction product for feed of pure starting material; m - number of mols of reaction product for feed of mixture; p - percent of reacting material in initial mixture. The hydrogen adsorption coefficients remained constant at 0.83. The isoprene adsorption coefficients dropped from 5.7 to 2.8 (z_2) between 530 and 580°C. The reaction rates were calculated using the adsorption coefficients and the plot of log K against the reciprocal of the absolute temperature gave a straight line. The activation energy was calculated as 23300 calories/molecule. The mixtures used in the tests were produced in the laboratory of Academician B.A.Kazanskiy and Corresponding Member N.I.Shuykin. There are 3 figures, 4 tables and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The four references to English language publications read as follows: Ref.3: US Patent 2440471, 1948; C.A.42, 54 4, 1948; Ref.4: US Patent 2442319, 1948; C.A.42, 6106, 1948; Ref.5: Grosse A., Morell J.C., Mavity J.M. Industr. Engng. Chem. 32, 309, 1940; Ref.6: Mavity J.M. Zetterholm E.E. Trans. Am. Inst. Chem. Engn., 40, 1944, 473.

Card 4/4

S/595/60/000/000/010/014
E075/E435

AUTHORS: Bogdanova, O.K., Balandin, A.A., Baryshnikova, I.P.

TITLE: Dehydrogenation kinetics of ethyl benzene to styrene and isopropyl benzene to α-methylstyrene

SOURCE: Vsesoyuznoye soveshchaniye po khimicheskoy pererabotke neftyanykh uglevodorodov v poluprodukty dlya sinteza volokon i plasticheskikh mass. Baku, 1957. Baku, Izd-vo AN Azerb. SSR, 1960, 241-247

TEXT: The object of the work is a study of the kinetics of dehydrogenation of ethyl and isopropyl benzene; it is a continuation of the authors' investigations on the effect of molecular structure on dehydrogenation kinetics. The experimental work was carried out by passage through an electrically heated glass tube contahing an oxide catalyst on a screen, at atmospheric pressure. Dilution ratios of 1:3 to 5 and 1:2 were used for ethyl and propyl benzene respectively; the steam was superheated to 300°C. Liquid and gaseous product fractions were analysed and good agreement between hydrogen and unsaturated hydrocarbons was found. The kinetics of isopropyl benzene dehydrogenation were studied at three feed rates in the

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Dehydrogenation kinetics'...

temperature range of 500 to 550°C, rate being measured by the hydrogen produced. A table of reaction product analysis is given. Under identical conditions the dehydrogenation rate of binary mixtures of isopropyl benzene and its reaction product, α-methylstyrene, were studied to obtain adsorption coefficients on the catalyst from

$$z = \frac{\frac{m_0}{m} - 1}{\frac{100}{p} - 1} \qquad (1)$$

where m_0 = number of moles reaction product for feed of pure starting material; m = number of moles reaction product for feed of mixture; p = % of starting material in mixture.
The relative adsorption coefficient of hydrogen was found to be 0.7 and was independent of temperature. The relative adsorption coefficient of α-methylstyrene falls with temperature, a table and graph are given. Plotting the log of the adsorption coefficient against the reciprocal of the absolute temperature gives a straight line. The reaction rate was calculated by using the general equation for catalytic reactions derived by A.A.Balandin (Ref.2:

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ZhOKh, 1942, 12, 156)

$$[2{,}303(z_2+z_3)A_1]\lg\frac{A_1}{A_1-m}-m(z_2+z_3-1)=K \qquad (2)$$

The calculated reaction rate has been plotted against the reciprocal of the absolute temperature and the points lie on a straight line. The activation energy has been calculated as 30.3 Kcals/mol. A series of experiments with catalyst particles varying in size from 1.5 to 5 mm was carried out; particle size had no effect on reaction rate. The dehydrogenation of ethyl benzene was studied in the range of 520 to 560°C. The results were similar to those obtained with isopropyl benzene but the adsorption coefficients and reaction rates were considerably lower. Figures for product analysis, adsorption coefficients and reaction rates are given. The higher rates for isopropyl benzene are considered to be due to the introduction of a methyl group into the alpha position. At higher temperatures there is a considerable increase in conversion; in the 580 to 600°C range at rates of 800 to 1000 ml/litre catalyst/hour, yield of styrene

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Dehydrogenation kinetics ...

and methylstyrene reached 70 to 83%, which is near to equilibrium. This is of considerable practical interest. Increase of feed rate towards 1400 to 2000 ml/litre catalyst/hour led to a slow decrease in yield. At these higher temperatures the reaction rate plot changes but the plot of Log K against the reciprocal of the absolute temperature still falls on a straight line of a different slope. The activation energies become 18.8 and 19.5 Kcals for isopropyl and ethyl benzene respectively. [Abstractor's note: Steam adsorption was neglected in all reaction rate calculations.] The dehydrogenation of ethyl cyclohexane was investigated. The low rate of reaction shows that in the absence of conjugation, the dehydrogenation of the side chain is slowed down. There are 5 figures, 4 tables and 5 references: 2 Soviet-bloc and 3 non-Soviet-bloc. The reference to an English language publication reads as follows: Ref.4: Gilliland E.K. Chem. Eng. News. 23, 129 (1945).

Card 4/4

S/020/60/132/02/27/067
B011/B002

5.3200

AUTHORS: Bogdanova, O. K., Balandin, A. A., Academician, Belomestnykh, I. P.

TITLE: Catalytic Dehydrogenation of Isopropyl Benzene

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 343-345

TEXT: The authors investigated the reaction kinetics and the influence of the structure of the carbon molecule on the reaction rate of the catalytic dehydrogenation of isopropyl benzene. The experiments were conducted according to the continuous method on a mixed-oxide catalyst (Ref. 3). The substance used for dilution was water vapor (weight proportion of 1:2). Before the reaction, the water vapor was overheated to 300°. The contents of CO_2, unsaturated and saturated hydrocarbon and hydrogen were determined in the gas obtained after the reaction. The catalysate was colorless. A far-reaching agreement was observed between the amount of liberated hydrogen and the developing α-methylstyrene (Table 1). For 30 min a mixture of air and water vapor was blown through the catalyst after each experiment, and thus the activity of the catalyst was maintained. The kinetics of the above reaction was investigated at 500°-550° with a passage of 0.42 ml within 3 min. The latter corresponded to a volume

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Catalytic Dehydrogenation of Isopropyl Benzene

S/020/60/132/02/27/067
B011/B002

velocity of 800 ml per 1 l of the catalyst per 1 h. The reaction rate was determined from the amount of the liberated hydrogen. The contact gas mainly consists of hydrogen with 0.5% to 2.0% of CO_2, and contains up to 0.4% of unsaturated, but no saturated hydrocarbons (Table 1). The constants of the reaction rate were calculated from the obtained data according to Ref. 7 on the basis of equation (1) in such a way that they can be used under the conditions of a continuous system. The authors also investigated the rate of dehydrogenation of binary mixtures of isopropyl benzene with α-methyl styrene and hydrogen. From the results they determined the relative adsorption coefficients (z_2 and z_3) of the reaction products. For this purpose they used the formula given by Ref. 8. Table 2 shows the values of these coefficients. Hence z_2 of α-methyl styrene is reduced from 3.8 at 520° to 0.95 at 550°. As regards hydrogen however, the value of z_3 does not change with the temperature and is 0.7. Fig. 1 shows the logarithmic dependence of the reaction rate constants on the absolute reciprocal temperature. The points form a straight line. The Arrhenius equation is observed. The activation energy is 30.3 kcal/mole and the pre-exponential factor $\lg k_0 = 6.25$. The authors found out that the grain size of the catalyst (1.5, 3, and 5 mm) is of no effect on the process. The dependence of the yield of α-methyl styrene on the temperature of the catalyst with various grain sizes

Catalytic Dehydrogenation of Isopropyl Benzene

S/020/60/132/02/27/067
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is illustrated by Fig. 2. The points of these two dependences are lying on the same curve. Hence the authors concluded that their experiments took place within the kinetic range. From z_2 and z_3 the changes of the liberated energy ΔF, the heat content ΔH and the entropy ΔS were calculated in the adsorption displacement from the active centers of dehydrogenation. The degree of the dehydrogenation of isopropyl benzene increases with rising temperature. At 580° and 607°, the yield in α-methyl styrene attains 70.5% and 83%, respectively (Table 1). G. M. Marukyan is mentioned. There are 2 figures, 2 tables, and 8 references, 4 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: February 8, 1960

Card 3/3

BOGDANOVA, O.K.

S/020/60/133/03/07/013
B016/B068

AUTHORS: Balandin, A. A., Academician, Bogdanova, O. K., Shcheglova, A. P.

TITLE: Catalytic Dehydrogenation of Cyclohexanol

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 3, pp. 578 - 580

TEXT: It was shown by the authors in earlier publications (Ref. 1) that several aliphatic alcohols can be dehydrogenated over a mixed oxide catalyst without any noticeable formation of by-products due to decomposition and dehydration. They showed in this publication that the same catalyst may be also used to dehydrogenate cyclohexanol. This method of preparing cyclohexanone is being used in the production of synthetic fibers in which cyclohexanone is applied as a good solvent. According to Ye. V. Tur, S. A. Anisimov, and M. S. Platonov (Ref. 2), the cyclohexanone yield is up to 25.3% over finely disperse rhenium at 350°C. Benzene, cyclohexane, and other compounds form as by-products. The cyclohexanone yield over a nickel-aluminum catalyst according to

Catalytic Dehydrogenation of Cyclohexanol S/020/60/133/03/07/013
B016/B068

Zelinskiy and Komarevskiy is about 37% at 380°C, with larger amounts (about 48%) of benzene, and, in addition, phenol, cyclohexene, and polymer products being formed. Moreover, the authors give data obtained by German and Japanese researchers. They studied the kinetics of the mentioned reaction, and determined the relative absorption coefficients, the reaction rate constants together with the activation energies (Table 3), the changes in free energy, heat content, and the entropies found for the adsorptive displacement of the alcohol molecules from the active dehydrogenation centers by cyclohexanone (Table 2). Finally, the authors established the conditions of dehydrogenation which secure high yields of cyclohexanone. The continuous method was applied for these experiments. They were carried out in an apparatus described previously (Ref. 8) and over a similar oxide catalyst sample. The conversion degree of alcohol in cyclohexanone varies between 16 and 75.8% of theory (Table 1). The results of further experiments carried out with binary cyclohexanol - cyclohexanone mixtures (containing 24.6 mole % of the latter) are shown in Table 2. From these results, it follows that the relative adsorption coefficient of cyclohexanol is 3.03 at 281°C, and drops to 0.91, if the temperature is raised to 336°. A logarithmic

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dependence holds between the adsorption coefficient and reciprocal temperature (Fig. 1). It can be seen from Table 2 that the values of the mentioned coefficients remain unaltered, if the temperature is kept constant and the rates of passage are varied. From Table 4, it can be seen that the conversion degree of alcohol increases from 67.9 to 88.2%, when the temperature is raised from 333 to 360°C and the rate of passage per hour is increased. There are 2 figures, 4 tables, and 10 references: 7 Soviet and 3 American.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: March 18, 1960

S/020/60/133/004/036/040XX
B016/B054

AUTHORS: Bogdanova, O. K., Balandin, A. A., Academician, and Belomestnykh, I. P.

TITLE: The Effect of the Conjugation Energy on the Rate of Catalytic Dehydrogenation of Alkyl-aromatic and Alkyl-hexahydro-aromatic Hydrocarbons

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 4, pp. 841-842

TEXT: The authors report on their investigations of the dehydrogenation of ethyl cyclohexane and isopropyl cyclohexane on mixed oxide catalyst. They proceeded from the results of a previous paper (Ref. 1) which showed that ethyl benzene and isopropyl benzene are well dehydrogenated on this catalyst. The rate constant of the dehydrogenation of isopropyl benzene with a ramified alkyl radical is twice that of ethyl benzene (Table 1). Apparatus and methods used for the experiment are described in the paper mentioned (Ref. 1). The amount of catalyst used was 10 ml, the temperature

The Effect of the Conjugation Energy on the Rate of Catalytic Dehydrogenation of Alkyl-aromatic and Alkyl-hexahydro-aromatic Hydrocarbons

S/020/60/133/004/036/040XX
B016/B054

was 550 - 600°C, the volume velocity of the hydrocarbon was 1000 ml/l · h (equal to a rate of travel of 0.5 ml per 3 min). Afer every experiment, the catalyst was blown through with vapor - air mixture and with air. Cyclohexane was also used for the experiments; it can, however, not be dehydrogenated under the above conditions. The dehydrogenation of ethyl cyclohexane at 550° was poor (1% of vinyl cyclohexane was formed); the same applies to isopropyl cyclohexane (2% of isopropylidene cyclohexane). At 600°C, these yields were 3.8, and 6.7% respectively. At 600°C, methane, ethane, and unsaturated hydrocarbons were formed by cracking. The authors conclude from their results that the rate of catalytic dehydrogenation depends on the structure of the hydrocarbons used, on that of their alkyl radicals, and mainly on the possibility of formation of a conjugate bond with the aromatic ring. The dehydrogenation of the alkyl group of the hexahydro-aromatic ring is rendered difficult. There are 1 table and 7 references: 5 Soviet, 1 British, and 1 German.

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The Effect of the Conjugation Energy on the Rate of Catalytic Dehydrogenation of Alkyl-aromatic and Alkyl-hexahydro-aromatic Hydrocarbons

S/020/60/133/004/036/040XX
B016/B054

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: April 13, 1960

Card 3/3

S/020/60/133/006/007/016
B016/B060

AUTHORS: Shcheglova, A. P., Bogdanova, O. K., Balandin, A. A., Academician

TITLE: The Problem of Dehydrogenating Butane - Butylene Mixtures on an Aluminum Chromium Catalyst

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1350-1353

TEXT: The present investigation was carried out in 1950. The catalyst was supplied by M. N. Marushkin (Ref. 6). The authors wanted to collect data concerning the kinetics and mechanism of the dehydrogenation mentioned in the title. The dehydrogenation rates of butane and its binary mixtures with butylene (Table 2), butadiene, and hydrogen (Table 3) were measured under optimum conditions. Since butylene and butadiene are decomposed on this catalyst, the authors measured the reaction rates in binary mixtures of these hydrocarbons with ethane in order to determine the degree of decomposition. In fact, ethane occupies,

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on the active surface, a part equal to butane, but is neither dehydrogenated nor decomposed. Figs. 1 and 2 show the decomposition of butylene and butadiene, respectively, as dependent on temperature. Experimental results confirmed the assumption previously put forward by the authors, according to which coal and resins result from the dehydrogenation mentioned in the title, due to the decomposition of butylene and, even more, butadiene (Table 3). The authors state in conclusion that the following reactions take place: 1) dehydrogenation of butane to butylene; its rate is inhibited by the butylene that is present in the initial mixture; 2) dehydrogenation of butane and butylene to butadiene; 3) decomposition of butane; 4) decomposition of butylene into light hydrocarbons and coal; 5) decomposition of butadiene into light hydrocarbons, coal, and condensation products. Butadiene develops in low yields at atmospheric pressure. The catalyst is soon polluted with coal and requires frequent regeneration. A more selective dehydrogenation of butane to butylene can be attained (Refs. 1,6) at lower temperatures. Less light hydrocarbons and coal are thus formed.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205910009-5"

The Problem of Dehydrogenating Butane - Butylene Mixtures on an Aluminum Chromium Catalyst

S/020/60/133/006/007/016
B016/B060

The authors draw the conclusion that the catalyst used is specific for the dehydrogenation of saturated hydrocarbons (butane). There are 2 figures, 4 tables, and 6 Soviet references.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: March 26, 1960

Card 3/3

BOGDANOVA, O.K.; BALANDIN, A.A.; SHCHEGLOVA, A.P.

Regularities in the catalytic dehydrogenation of primary and secondary alcohols. Izv.AN SSSR Otd.khim.nauk no.3:425-429 Mr '61. (MIRA 14:4)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Dehydrogenation) (Alcohols)

KOROTKEVICH, B.S.; SHENDRIK, M.N.; BOGDANOVA, O.K.; SHCHEGLOVA, A.P.; VINOGRADOVA, N.P.

Catalytic dehydrogenation of ethylbenzene. Khim.prom. no.4:243-248 Ap '61. (MIRA 14:4)

(Benzene) (Dehydrogenation)

BOGDANOVA, O.K.; SHCHEGLOVA, A.P.; BALANDIN, A.A.; VOZNESENSKAYA, I.I.

Catalytic dehydrogenation of n-pentenes. Izv.AN SSSR Otd.khim. nauk no.4:578-582 Ap '61. (MIRA 14:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Pentene) (Dehydrogenation)

BOGDANOVA, O.K.; SHCHEGLOVA, A.P.; BALANDIN, A.A.; BELOMESTNYKH, I.P.

Catalytic dehydrogenation of ethyl benzene into styrene.
Neftekhimiia 1 no.2:195-200 Mr-Ap '61. (MIRA 15:2)

1. Institut organicheskoy khimii AN SSSR im. N.D. Zelinskogo.
(Benzene) (Styrene)
(Dehydrogenation)

BALANDIN, A.A., akademik; BOGDANOVA, O.K.; BELOMESTNYKH, I.P.

Kinetics of the dehydrogenation of ethyl benzene to styrene. Dokl. AN SSSR 138 no.3:595-597 My '61. (MIRA 14:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Dehydrogenation) (Benzene) (Styrene)

53300

25313

S/020/61/138/005/013/025
B103/B215

AUTHORS: Bogdanova, O. K., Balandin, A. A., Academician, and Belomestnykh, I. P.

TITLE: Effect of the structure of alkyl-aromatic hydrocarbons on the kinetics of their dehydrogenation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 5, 1961, 1089-1092

TEXT: The authors explain the effect of the introduction of a second radical into the benzene ring of ethyl toluene on the dehydrogenation rate of the ethyl radical. They had already proved (Ref. 1: DAN, 132, No. 2, 343 (1960); Ref. 2: DAN, 138, No. 3 (1961)) that isopropyl benzene (ramified radical) is dehydrogenated faster than ethyl benzene (straight chain). The experiments were conducted in the apparatus of Ref. 1 by the same methods. The reaction rate was bromometrically determined by the method of G. D. Gal'pern (Ref. 3: Tr. Inst. nefti, 4, 141 (1954)) according to the amount of vinyl toluene produced. The catalyzate was also chromatographically analyzed. A mixture of dinonyl-didecyl sebacates (Neozone D content 2 %) 18 % of which was applied to diatomite bricks

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served as liquid phase. The temperature was 524-560°C, the flow rate 1000 ml/l·hr (0.5 ml per 3 min) diluted with H_2O vapor, in the ratio of 1:16 or 1:32. The experiment proceeded far from equilibrium. The amount of by-products (xylene, toluene) in the catalyzate was low. The contact gas contained only 0.2-0.4% of olefins and 0.5-0.9 % of saturated hydrocarbons. The relative adsorption coefficients were determined by measuring the rate of dehydrogenation of ethyl toluene - vinyl toluene (21 moles of vinyl toluene) mixtures. The coefficients z_2 of vinyl toluene drop from 3.8 at 530°C to 1.5 at 560°C. The function $\log z_2 = F(1/T)$ is linear. The coefficient $z_3 = 0.7$ for hydrogen does not change with temperature. The above kinetic results may be expressed by the general kinetic equation for monomolecular reactions in the continuous system (A. A. Balandin, Ref. 7: ZhOKh, 12, 160 (1942)). The dependence of the logarithm of the velocity constant on the reciprocal absolute temperature is also linear. The Arrhenius equation is observed. The energy of activation calculated from these constants is 34.6 kcal/mole and $\log k_o = 7.3$. On the basis of the adsorption coefficients determined for vinyl toluene on the active surface

S/020/61/138/005/013/025
B103/B215

of the catalyst, the authors calculated the changes in free energy, of enthalpy and entropy during the adsorptive displacement from the catalytic surface. The velocity constant of ethyl toluene dehydrogenation (0.731-1.704) at 530-560°C is higher than that of ethyl benzene (0.376-1.055). Hence, the authors conclude that the dehydrogenation of the ethyl radical is accelerated by introducing a methyl radical into the benzene ring. Since vinyl toluene is an important raw material for the production of synthetic rubber (copolymer production), perfumes, etc., the authors studied its dehydrogenation on a mixed oxide catalyst at 580°C and flow rates of 1000, 820, and 570 ml/l·hr. The experiments showed that the vinyl toluene yield (with respect to the flow of ethyl toluene) increased from 42.8 to 56.8 % as the velocity of flow decreases. Since the yields calculated with respect to decomposed ethyl toluene drop from 86.1 to 80.7 %, the authors assume the formation of by-products. Chromatographical studies showed that the amount of toluene increased from 0.6 to 1.4 % (at 570 ml/l·hr) and that of xylene from 4.3 to 10.8 %. 0.1 % of benzene was also formed. The authors therefore conclude that high yields of vinyl toluene are obtainable at 580°C and a high flow rate of ethyl toluene on the oxide catalyst. A. V. Bondarenko is mentioned.

Effect of the structure of... 25313

S/020/61/138/005/013/025
B103/B215

There are 3 figures, 4 tables, and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The two references to English-language publications read as follows: T. W. Evans (Ref. 8: J. Chem. Education, 32, 6 (1955); F. G. Buege, (Ref. 9: Ind. and Eng. Chem., 46, 1695 (1954).

SUBMITTED: February 28, 1961

Card 4/4

S/204/62/002/004/002/019
E071/E433

AUTHORS: Bogdanova, O.K., Shcheglova, A.P., Balandin, A.A.

TITLE: Catalytic dehydrogenation of the individual isopentenes into isoprene

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 442-447

TEXT: Kinetics of dehydrogenation of isomeric isopentenes into isoprene on an oxide catalyst in the temperature range 560 to 620°C at a volume velocity of about 5 h^{-1} and dilution with steam in a wt ratio of 1:3 were studied. The composition of the products was determined by the method of gas-liquid chromatography. Comparison of the obtained data indicates that an overall degree of transformation of the individual isomers in the abovementioned temperature range varies as follows: 2-methylbutene-2 (53.2 to 71.5%) > 2-methylbutene-1 (72.8 to 80.6%) > 3-methylbutene-1 (90 to 92%). From the obtained experimental data the ratio of the velocity constants of the dehydrogenation reaction for the individual isomers: 2-methylbutene-2 : 2-methylbutene-1 : 3 methylbutene-1 was found to equal 1.44 : 1.15 : 1.0. Dehydrogenation of 2-methylbutene-2 proceeds at a higher velocity

than that of the remaining two isomers. Isomerization of the starting hydrocarbons with a shift of the double bond occurs simultaneously with the dehydrogenation reaction. According to the degree of isomerization the isomers can be placed in the following order: 3-methylbutene-1 > 2-methylbutene-1 > 2-methylbutene-2. The most stable structure is that of 2-methylbutene-2 the least stable that of 3-methylbutene-1 with branching in the saturated part of the molecule. At 580 to 620°C, volume velocity of about 4.5 to 5.5 litre per litre of catalyst per hour and a dilution with steam in a ratio of 1 : 2.5 to 3 by wt, the yields of isoprene amounted to 25 to 41% on passed and 91 to 82% on reacted isopentenes. There are 3 figures and 3 tables.

ASSOCIATION: Institut organicheskoy khimii AN SSSR im. N.D.Zelinskogo (Institute of Organic Chemistry AS USSR imeni N.D.Zelinskiy)

S/204/62/002/004/005/019
E071/E433

AUTHORS: Belomestnykh, I.P., Bogdanova, O.K., Balandin, A.A.

TITLE: The influence of the structure of hydrocarbons on the kinetics of their dehydrogenation

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 467-472

TEXT: The influence of the structure of hydrocarbon molecules on the kinetics of their dehydrogenation was studied on isopropylbenzene, ethyl, ethyl-, 1-methyl-3-ethyl-, 1,4-dimethyl-2-ethyl, n.propyl- and diethylbenzenes, using the same oxide catalyst. The experiments were carried out in a straight through apparatus, with dilution of hydrocarbons with steam in a proportion of 1:2 to 3 (by wt), in the temperature range 500 to 560°C with a volume velocity of 0.8 to 1.0 hour^{-1} (for diethylbenzene temperature range 520 to 620°C at feeding rates of 1500, 700, 500 and 300 ml per litre of catalyst per hour). The velocity of dehydrogenation was determined on the basis of the evolution of hydrogen and alkenylbenzene formed. The compositions of catalysates were analysed by the chromatographic method. It was shown that alkylaromatic hydrocarbons with a branched radical and with substituents in the ring are dehydrogenated with a high

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velocity. From the experimental data the velocity constants of the dehydrogenation reaction were calculated for the individual hydrocarbons and the existence of the logarithmic dependence between the reaction constant and activation energy was confirmed. Changes in free energy, heat content and entropy of the adsorption displacement from active centres of the catalyst were calculated. It was shown that with the catalyst used the dehydrogenation products can be obtained with high yields at 565 to 620°C and high feeding rates: e.g. vinyltoluol can be obtained with a yield per pass of 43 to 57% (feeding rate 0.5 to 1.0 hour^{-1}), divinylbenzene with a yield per pass of 30 to 36% + 22 to 20% of ethylvinylbenzene (feeding rate 0.5 to 0.7 hour^{-1}). There are 7 figures and 3 tables.

ASSOCIATION: Institut organicheskoy khimii AN SSSR
im. N.D.Zelinskogo (Institute of Organic Chemistry
AS USSR imeni N.D.Zelinskiy)

BELOMESTNYKH, I. P.; BOGDANOVA, O. K.; BALANDIN, A. A.

Effect of the structure of hydrocarbons on their dehydrogenation kinetics. Neftekhimia 2 no.4:467-472 Jl-Ag '62. (MIRA 15:10)

1. Institut organicheskoy khimii AN SSSR imeni N. D. Zelinskogo.

(Hydrocarbons) (Dehydrogenation)

BOGDANOVA, O. K.; SHCHEGLOVA, A. P.; BALANDIN, A. A.

Catalytic dehydrogenation of individual isopentenes to isoprene.
Neftekhimia 2 no.4:442-447 Jl-Ag '62. (MIRA 15:10)

1. Institut organicheskoy khimii AN SSSR imeni Zelinskogo.

(Butane) (Isoprene)

BOGDANOVA, O.K.; BALANDIN, A.A., akademik; BELOMESTNYKH, I.P.

Dehydrogenation kinetics of alkylaromatic hydrocarbons as dependent on their structure. Dokl. AN SSSR 146 no.6:1327-1330 O '62. (MIRA 15:10)
(Hydrocarbons) (Dehydrogenation)

L 17058-63 EPF(c)/EWT(m)/BDS Pr-4 S/062/63/000/004/002/022
RM/WW

AUTHOR: Bogdanova, O. K., Balandin, A.A., and Belomestnykh, I. P.

TITLE: Regularities in the catalytic dehydrogenation of lkylaromatic hydrocarbons

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 4, 1963, 611-616

TEXT: The regularities found in studying the effect of the molecular structure of alkylbenzene on the kinetics of their dehydrogenation were examined. It was found the molecular structure of hydrocarbons regularly affects the rate constant, activation energy and reaction constant of dehydrogenation and the thermodynamic function of adsorption displacement on an oxide catalyst. The existence of a logarithmic relationship between the activation energy and the reaction constant was confirmed. A parallelism exists between the change of heat content and entropy during the adsorption displacement by the dehydrogenation products from the active centers of the catalyst. There are 5 figures and 2 tables.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelenskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N.D. Zelinskiy, Academy of Sciences USSR)

SUBMITTED: June 5, 1962

Card 1/1

L 12732-63 EPF(c)/EWP(j)/EWT(m)/BDS ASD Pr-4/Pc-4 RM/WW
ACCESSION NR: AP3002283 S/0062/63/000/006/0999/1003

67
66

AUTHOR: Shcheglova, A. P.; Bogdanova, O. K.; Balandin, A. A.

TITLE: Catalytic dehydrogenation of isomeric isopentanes. Report 1. Dehydrogenation of 2-methylbutene-2

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk , no. 6, 1963, 999-1003

TOPIC TAGS: preparation of isoprene, dehydrogenation rate of isomers

ABSTRACT: The object of this work is to study the formation rate of isoprene by individual dehydrogenation of isomeric pentanes (3-methylbutene-1, 2-methylbutene-1, and 2-methylbutene-2) which are obtained through a catalytic dehydrogenation of isopentane. The yield of isoprene, formed during the dehydrogenation of 2-methylbutene-2 using a mixed oxidizing catalyst at a flow rate of 4500 ml/l of catalyst per hour and with an increase of temperature from 560 to 620C increases from 20.5 to 41.5% of the total hydrocarbon used. Simultaneously with the dehydrogenation, the conversion of 2-methylbutene into 3-methylbutene (3.7-5%) and 2-methylbutene-1 (18.8-26.0%) takes place by means of shifting of the double bond. The composition of the isopentane isomers were determined by gas-liquid chromatography. Orig. art. has: 1 table and 3 figures.

Association: Organic Chemistry Inst., Academy of Sceinces

Card 1/2

SHCHEGLOVA, A.P.; BOGDANOVA, O.K.; BALANDIN, A.A.

Catalytic dehydrogenation of isomeric isopentenes. Report No.2: Dehydrogenation of 2-methyl-1-butene and 3-methyl-1-butene. Izv. AN SSSR. Ser.khim. no.7:1210-1215 Jl '63. (MIRA 16:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Butene) (Dehydrogenation)

BOGDANOVA, O.K.; BALANDIN, A.A.; BELOMESTNYKH, I.P.

Effect of the structure of alkyl aromatic hydrocarbons on the kinetics of their dehydrogenation, and the dehydrogenation of diethylbenzene. Izv. AN SSSR. Ser. khim. no.12:2100-2105 D '63. (MIRA 17:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

BOGDANOVA, O. Kh., Cand Biol Sci -- (diss) "Morphological and anatomical changes in some varieties of potatoes under the conditions of Central Asia." Tashkent, 1960. 19 pp; (Academy of Sciences Uzbek SSR, Inst of Botany of the Academy of Sciences Uzbek SSR); 180 copies; price not given; (KL, 26-60, 132)

PENKINA, O.M.; BOGDANOVA, O.V.

Removal of cyclopentadiene from iso-pentane in the presence of aluminum-silicon catalysts. Khim. prom. 42 no.9.658-660 S '65. (MIRA 18:9)

L 10775-66 EWT(m)/T/EWP(J) WE/RM
ACC NR: AP6000454 SOURCE CODE: UR/0064/65/000/009/0018/0020

AUTHOR: Penkina, O. M.; Bogdanova, O. V. 44,55

ORG: None

TITLE: Removal of cyclopentadiene impurities from isopentane in the presence of alumina-silica catalysts 44,55

SOURCE: Khimicheskaya promyshlennost', no. 9, 1965, 18-20

TOPIC TAGS: cyclopentadiene, isopentane, alumina, silica, industrial catalyst

ABSTRACT: The possibility of using alumina-silica catalysts for the removal of cyclopentadiene impurities from isopentane was studied on an isopentane distillate containing 98.3 wt. % isopentane, 0.03 wt. % cyclopentadiene, and 0.0003 wt. % sulfur compounds if subjected to preliminary hydrofining, and 98.8 wt. % isopentane, 0.086 wt. % cyclopentadiene, and 0.0032 wt. % sulfur compounds if not subjected to hydrofining. The effect of temperature, feed space velocity of isopentane, and sulfur compounds on the degree of removal of cyclopentadiene was studied in the 20–300C range. About 200C was found to be the optimum temperature, and 0.5–1.5 hr^{-1} was the optimum space velocity. At high temperatures (above 300C), the poisoning effect of sulfur compounds was found to deactivate the

Card 1/2 UDC: 661.715.25:66.067.85.069.84:547.514.72

L 10775-66
ACC NR: AP6000454

catalyst almost completely. After three regeneration cycles, the catalyst yielded the same results as when it was fresh; i.e., its activity was completely regenerated from one cycle to the next. The method of removal of cyclopentadiene from isopentane was carried out on a pilot-plant scale, and the final cyclopentadiene content of isopentane was 0.0002--0.0003 wt. %. Orig. art. has: 4 tables.

SUB CODE: 07 / SUBM DATE: none

Card 2/2

ACC NR: AP7005688 (A) SOURCE CODE: UR/0413/67/000/002/0159/0159

INVENTOR: Bogdanova, R. A.; Kalabukhova, L. N.; Rudevskaya, S. I.; Petrichenko, A. A.

ORG: None

TITLE: A parachute pack cover. Class 62, No. 190798

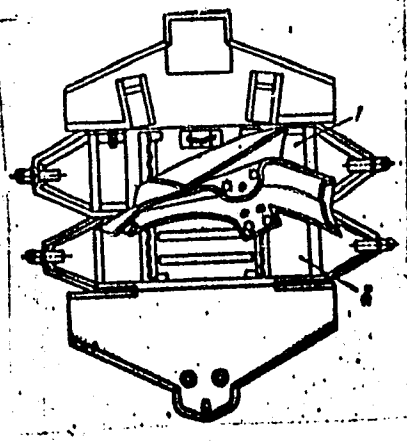
SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 159

TOPIC TAGS: parachute, auxiliary aircraft equipment

ABSTRACT: This Author's Certificate introduces a parachute pack cover which contains two compartments with four valves in each. The enclosure is designed for safety in teaching parachutists to activate the auxiliary chute during abnormal operation of the main chute, and also for use in multistage parachute systems. The unit incorporates parallel arrangement of the two compartments on a common base, each compartment having its own opening mechanism.

Card 1/2 UDC: 629.13.01/06

ACC NR: AP7005688



1--upper compartment; 2--lower compartment

SUB CODE: 01/ SUBM DATE: 09Dec65

Card 2/2

AGALETSKIY, P.N.; BARASH, V. Ya.; BOGDANOVA, S.A.; NIKULINA, Zh.P.

Developing a standard accelerometer. Izm.tekh. no.7:12-17 Jl '61. (MIRA 14:6)

(Accelerometers)

VANYUSHIN, B.F.; BELOZERSKIY, A.N.; ROGDANOVA, S.L.

Comparative study of the nucleotide composition of ribonucleic and desoxyribonucleic acids in some fungi and myxomycetes. Dokl. AN SSSR 134 no.5:1222-1225 O '60. (MIRA 13:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Belozerskiy).
(FUNGI) (NUCLEOTIDES) (MYXOMYCETES)

KHESIN, R.B.; SHEMYAKIN, M.F.; GORLENKO, Zh.M.; BOGDANOVA, S.I.; AFANAS'YEVA, T.P.

RNA-polymerase in Escherichia coli B cells infected with T2 phage.
Biokhimiia 27 no.6:1092-1105 N-D '62. (MIRA 17:5)

1. Institut atomnoy energii imeni I.V.Kurchatova, Moskva.

TIMOFEYEVA, G.A., kand.med.nauk; BOGDANOVA, S.M.; DANILOVA, V.A.; LYUSTIGMAN, Ye.D.

Etiology and clinical aspects of gastrointestinal diseases in children, especially infants. Sov. med. 25 no.2:42-46 F '62. (MIRA 15:3)

1. Iz kafedry infektsionnykh zabolevaniy u detey (zav. kafedry - dotsent A.T. Kuz'michava) Leningradskogo pediatricheskogo meditsinskogo instituta (dir. - kand.med.nauk Ye.P. Semenova) i detskoy infektsionnoy bol'nitsy Sverdlovskogo rayona (glavnyy vrach - zasluzhennyy vrach RSFSR N.A. Nikitina).
(GASTROENTEROLOGY)

TIMOFEYEVA, G.A., kand.med.nauk; BOGDANOVA, S.M.

Clinical laboratory characteristics of Salmonella infections in children. Vop.okh.mat.i det. 8 no.3:40-46 Mr '63. (MIRA 16:5)

1. Iz kafedry infektsionnykh zabolevaniy u detey (zav. - prof. A.T. Kuz'micheva) Leningradskogo pediatricheskogo meditsinskogo instituta i Vasileostrovskoy detskoy infektsionnoy bol'nitsy (glavnyy vrach - zasluzhennyy vrach RSFSR N.A. Nikitina).
(SALMONELLA INFECTIONS)

BOGDANOVA, S.P.

Fixing chrome dyes in a reducing ager. Obm. opyt. [MLP] no.9:17-18 '56. (MIRA 11:10)

(Dyes and dyeing--Chemistry)

BOGDANOVA, S.P.

Device making easier steaming operations. Obm. tekh. opyt. [MLP] no.9:18-20 '56. (MIRA 11:10)
(Textile finishing--Equipment and supplies)

LAPINSKAYA, T.A.; BOGDANOVA, S.V.; ZHURAVLEV, Ye.G.

Petrography and tectonic features of the crystal basement in the Volga-Ural oil- and gas-bearing region. Trudy MINKHiGP no.43: 280-297 '63. (MIRA 17:4)

BOGDANOVA, S.V.

Monazite from Pre-Cambrian rocks in the Volga-Ural region. Dokl. AN SSSR 154 no.6:1344-1346 F '64. (MIRA 17:2)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I.M.Gubkina. Predstavleno akademikom D.S.Korzhinskim.

BOGDANOVA, S.V.

Geology and petrography of Pre-Cambrian sediments in the area of the Mukhanovo oil and gas field (Kuybyshev Province). Trudy MINKHiGP no.27:237-248 '60. (MIRA 13:9)
(Mukhanovo region--Petrology)

ORECHKIN, D.B., OVSYANIKOV, L.F., BOGDANOVA, T.A.

Destructive hydrogenation of total liquid-phase petroleum hydrogenates on fixed bed on fixed bed catalysts. Trudy Vost.-Sib.fil.AN SSSR no.26: 71-85 '59. (MIRA 13:6)
(Petroleum products) (Hydrogenation) (Catalysts)

BOGDANOVA, T.A.

3

33602
S/678/61/000/038/001/009
A057/A126

11.0160

AUTHORS: Kalechits, I.V., Pavlova, K.A., Kaliberdo, L.M., Skvortsova, G.O., Bogdanova, T.A., Sidorov, R.I , Trotsenko, Z.P.

TITLE: On the chemism of transformations of bi-cyclic hydrocarbons under conditions of destructive hydrogenation

PERIODICAL: Akademiya nauk SSSR. Vostochno-Sibirskiy filial. Trudy. Seriya khimicheskaya, no. 38, Moscow, 1961. Prevrashcheniya aromaticheskikh uglevodorodov v protsesse destruktivnoy gidrogenizatsii., 31 - 57

TEXT: Laboratory experiments on destructive hydrogenation of naphthalene, tetralin, and decalin were carried out under semi-industrial conditions in presence of industrial catalysts. The composition of the products obtained was classified, 17 single hydrocarbons were separated, and 11 more determined by spectrum analysis. It is shown that transformations of bi-cyclic hydrocarbons occur in the presence of tungsten catalysts and in vapor-phase processes preferably by consecutive hydrogenation isomerization, and final splitting. The transformations observed are explained by the carbenium-ionic the-

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33602
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A057/A126

On the chemism of .....

ory, and schemes for transformations of bi-cyclic hydrocarbons in vapor- and liquid-phase processes presented. In the present paper a discussion is presented of the problem of transformations of polycyclic hydrocarbons with a review of appropriate literature data. Among the problems to be solved is the question, whether a direct splitting of the ring is possible in hydrocarbons of the tetralin, tetrahydroanthracene, etc. type, or whether isomerization occurs before and which bonds and by what reasons are most easily split. This and related problems were investigated before. Experiments were carried out too, with a powdered Fe-semicoke catalyst at 470°C, 450 atm, 3 h and 10% catalyst. The products obtained were separated by fractional distillation, and the remainder chromatographically treated over silica gel [types MCM (MSM), or KCM (KSM)]. After separating methane-naphthenic and aromatic fractions, narrow cuts were prepared by fractional distillation. The cuts were specified by n_D^{20} and d_4^{20} values, and some also by Raman spectra [taken on an ИСП-51 (ISP-51) spectrograph]. The amount of cyclohexane and homologues, and of bicyclic hydrocarbons containing hexamethylene rings were determined by D.D. Zelinskiy's method of dehydrogenation catalysis. The content of paraffinic and monocyclic naphthenic hydrocarbons was determined by means of specific refraction R_D and molecular

Card 2/3

On the chemism of .....

weight and nomograms. In fractions boiling above 144°C, the R_D value decreased, thus indicating the presence of bi-cyclic naphthenes. The authors assumed for these fractions that 1) only a mixture of paraffinic and bicyclic naphthenes is present, or 2) only mono-, and bicyclic naphthenes. A principal difference in the transformation mechanism of bicyclic hydrocarbons between liquid- and vapor-phase conditions can be seen by comparing the types of hydrocarbon groups in the hydrogenation products. Completely different occurs the vapor-phase hydrogenation in presence of tungsten catalysts. The isomerization process is much more intensive (twice as many products) than in liquid-phase hydrogenation, or without catalyst. The present experimental data, as well as those obtained in prior investigations (with other catalysts) can be explained by assuming the ionic mechanism. A partial occurence of a radical mechanism is not excluded. There are 6 figures and 10 tables.

Card 3/3

BOGDANOVA, T.A.; MORZHEY, V.V.; KALECHITS, I.V.

Mutual transformations of stereoisomeric 1,3-dimethylcyclopentanes in analytical dehydrogenation. Dokl. AN SSSR 159 no.2:361-364 N '64. (MIRA 17:12)

1. Predstavleno akademikom B.A. Kazanskim.

[redacted], T.A., SIDOROV, S.I.

Individual composition of the paraffin-naphthene fraction of hydrogenation products of bicyclic hydrocarbons boiling up to 300°C. Khim.i VKUO 30 no.4:479-480 '65.

(MIRA 18:11)

1. Institut neftekhimicheskogo sinteza pri Irkutskom gosudarstvennom universitete i [redacted] Akademii nauk.

BOGDANOVA, T.F.

Dependence of the spring wheat crop on precipitation in the central nonchernozem zone. Meteor. i gidrol. no.7:46-48 Jl '65. (MIRA 18:6)

1. TSentral'nyy institut prognozov.

BOGDANOVA, T.F.

Agroclimatic indexes of the productivity of spring wheat in various levels of agricultural technology in the steppe and forest-steppe zones of the European territory of the R.S.F.S.R. Trudy TSIP no.140, 59-70 '65. (MIRA 18:7)

BOGDANOVA, T. I.

"Nerves of the Popliteal Artery and Vein." Sub 15 Sep 47, First Moscow Order of Lenin Medical Inst

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55

BOGDANOVA, T.I.

Some practical considerations on Bielschowsky-Gross impregnation.
Biul. eksp. biol. med. 47 no.1:122-123 Ja '59. (MIRA 12:3)

1. Iz laboratorii anatomii nervnoy sistemy (zav. - prof. S.B. Dzugayeva) Instituta mozga (dir. - deystvitel'nyy chlen AMN SSS S.A. Sarkisov) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR V.N. Chernigovskim.
(NERVES, PERIPHERAL, anat. & histol.
Bielschowsky-Gross stain. (Rus))
(STAINS AND STAINING
Bielschowsky-Gross method (Rus))

BOGDANOVA, T.I. [Bohdanova, T.I.]

Fine injection of cerebral blood vessels in man and animals.
Dop.AN URSR no.4:531-533 '61. (MIRA 14:6)

1. Moskovskiy meditsinskiy stomatologicheskiy institut Predstavleno akademikom AN USSR V. G. Kas'yanenko [Kas'ianenko, V. H.].
(BRAIN—BLOOD SUPPLY)
(INJECTIONS, ANATOMICAL)

BOGDANOVA, T.I. [Bohdanova, T. I.]

New method for preparing arthrological specimens for research and educational purposes. Dop.AN URSR no.6:819-821 '61.
(MIRA 14:6)

1. Moskovskiy meditsinskiy stomatologicheskiy institut.
Predstavleno akademikom AN USSR V.G. Kas'yanenko [Kas'ianenko, V.H.].
(CONNECTIVE TISSUES)
(ANATOMICAL SPECIMENS—COLLECTION AND PRESERVATION)

BOGDANOVA, T.I., assistent

Simultaneous compound identification of the neurovascular systems and structures of individual tissues and organs with silver nitrate. Teor. i prak.stom. no.6:162-164 '63.

Fixation of cadaver material without the use of formalin. Ibid.:165 (MIRA 18:3)

1. Iz kafedry normal'noy anatomii (zav. - prof. N.V.Kolesnikov) Moskovskogo meditsinskogo stomatologicheskogo instituta.

BOGDANOVA, T.L. [Bohdanova, T.L.]

Possible control of algae by chemical means; preliminary report. Visnyk Kyiv. no.5. Ser. biol. no.1:10-13 '62. (MIRA 16:5)

(ALGAE) (AQUATIC WEED CONTROL)

L 23845-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pr-4 MJW/JD/HW

ACCESSION NR: AR5000588 S/0137/64/000/008/D039/D039

SOURCE: Ref. zh. Metallurgiya, S., t., Abs. 8D229

AUTHOR: Rudoy, V. S.; Mlinarich, B. A.; Bogdanova, T. M. B

TITLE: The possibility of rolling pipes of chromium-nickel-manganese steel

CITED SOURCE: Sb. Proiz-vo trub, vy*p. 12. M., Metallurgiya, 1964, 10-14

TOPIC TAGS: chromium-nickel-manganese steel, pipe, hot rolling, broaching, steel EP278, steel EI835

TRANSLATION: An investigation was made of the special industrial characteristics of hot working of two chromium-nickel-manganese steels containing nitrogen and boron - steels EP278 and EI835, both of which differ basically in their silicon and manganese content. Test rolling of billets with square and circular cross sections on a mill with barrel rollers made it possible to construct a power diagram for each case of rolling. Results of hot torsion tests were

Card 1/2 *[Broaching probably means "piercing"]

L 23845-65
ACCESSION NR: AR5000588

confirmed in testing steel EP278 for broachability by rolling tapered samples on a laboratory roller broaching mill. Broaching on a 140 automatic roller broaching mill showed that heating of billets made of steel EP278 reaches 130-140° with a reduction in drawing of 1.75-2.00. It was established by the investigation that the mechanical properties of steels EP278 and EI835 at room temperature are characterized by a combination of high values for indices of strength, ductility, and impact resistance. Both steels are characterized by a lowering of the yield point with an increase in hot working temperature accompanied by a relatively small change in tensile strength. The low ductility of steel EP278 in the hot state does not permit it to be used for rolling pipes of satisfactory quality on a 140 automatic installation. To produce pipes of this steel other hot working processes must be applied which assure a more favorable system of the state of stress in low ductility metal: pressing, rolling on a pilger mill, etc. The somewhat better industrial properties of steel EI835 provide a basis for considering that pipes can be made from it on a 140 automatic installation. K. Ursova.

SUB CODE: MM ENCL: 00

Card 2/2

L 20601-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k) JD/HW
ACC NR: AP6010136 SOURCE CODE: UR/0133/66/000/003/0248/0250

AUTHOR: Rudoy, V. S. (Candidate of technical sciences); Alferova, N. S. (Doctor of technical sciences); Mlinarich, B. A. (Engineer); Bogdanova, T. M. (Engineer); Sadokov, G. M. (Engineer); Mel'nichenko, I. F. (Engineer); Kirvalidze, N. S. (Engineer); Kurilenko, V. Kh. (Engineer); Onishchenko, M. P. (Engineer)

ORG: none

TITLE: Production of tubes from OKh20N5T stainless steel

SOURCE: Stal', no. 3, 1966, 248-250

TOPIC TAGS: stainless steel, low nickel steel, stainless steel tube, tube rolling, hot rolling / Okh20N5T steel, EP299 steel

ABSTRACT: Technological properties of EP299 (OKh20N5T) stainless steel and the conditions for tube rolling this steel have been studied. The steel, annealed at 1050C for 15 min and air cooled, has a tensile strength of 101 kg/mm^2, a yield strength of 34 kg/mm^2, an elongation of 40.6%, and a reduction of area of 62.1%. Corresponding figures for test temperature at 350C are 52 kg/mm^2, 39.0% and 69.7%. The steel is very sensitive to the cooling rate: slow cooling sharply reduces the elongation and impact strength. The plasticity of EP299 steel does not change in the 1100—1250C range, but increases sharply with further increases in temperature and rapidly increasing content of α-phase. Up to 1250C the plasticity of EP299 steel is much

Card 1/2 UDC: 621.744.35

L 20601-66
ACC NR: AP6010136

lower, but at 1275C and over much higher, than that of Kh18N10T and EI-811 steels. The hot working of EP299 steel must be done at temperatures over 1250C. The steel, however, has a tendency to stick to guide bars. With guide bars made from G18 steel (1.4—1.8% C, 16—19% Mn) and piercing done at 1275—1300C, the tendency to stick was greatly reduced. The mechanical properties and surface quality of hot-rolled and heat-treated EP299 tubes were satisfactory, and the tubes were suitable for cold rolling and cold drawing. Orig. art. has: 2 figures. [AZ]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 4/225

Card 2/2 3K

BOGDANOVA, T. N.

BOGDANOVA, T. N. A laboratory manual for physics courses 3. perer. i dop. izd., Moskva, Sovetskaia nauka, 1949- (51-20077)

QC37.B65

BOGDANOVA, Taisiya Nikitichna; Prinimala uchastiye KORENEVA, N.K.; MOROZOVA, I.I., red.; ZARSHCHIKOVA, L.N., tekhn. red.

[Polymer film materials for the packaging of food products] Plenochnye polimernye materialy dlia upakovki pishchevykh produktov; spravochnoe posobie. Moskva, Pishchepromizdat, 1963. 150 p. (MIRA 16:8)
(Plastics) (Food—Packaging)

1. BOGDANOVA, T. N. and SUBBOTINA, Ye. P.

2. USSR (600)

4. Physics and Mathematics

7. Guide to Practical Occupations in Physics, T. N. Bogdanova, and Ye. P. Subbotina. (Moscow, Soviet Science".) Reviewed by I. A. Yakovlev, Sov. Kniga, No. 9, 1951.

9. Report U-3081, 16, Jan. 1953. Unclassified.

BOGDANOVA, T. N.

"The Study of the Heterohemagglutination Properties of Human Blood." Cand Med Sci, Rostov State Medical Inst, Makhachkala, 1954. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertation Defended at USSR Higher Educational Institutions. (14)

BOGDANOVA, T.N., kand.med.nauk

Use of hydrolysin in the treatment of dysentery in children. Akt. vop.perel.krovi no.7:314-316 '59. (MIRA 13:1)

1. Dagestanskaya stantsiya perelivaniya krovi.
(BLOOD PLASMA SYBSTITUTES) (DYSENTERY)

BOGDANOVA, T.N.

Pelecypods of the Valangin in the Kopet-Dag and their stratigraphic distribution. Trudy VSEGEI 46:126-150 '61. (MIRA 14:11)
(Kopet-Dag--Lamellibranchiata, Fossil)

SIRENKO, L.A.; BOGDANOVA, T.L. [Bohdanova, T.L.]

Stimulating the development of Anabaena variabilis culture by the use of physiologically active substances. Visnyk Kyiv.un. no.5. Ser.biol. no.2:7-9 '62. (MIRA 16:5)
(ALGAE—CULTURES AND CULTURE MEDIA)
(GROWTH PROMOTING SUBSTANCES)

BOGDANOVA, T.P., mladshiy nauchnyy sotrudnik

Ozone as an agent for ridding water of bacterial spores. Gig. i san. no. 10:96-98 O '60. (MIRA 13:12)
(WATER--BACTERIOLOGY) (OZONE)

BOYARINOVA, B.A.; BOGDANOVA, T.S.

Testing of the effectiveness of the diphtheria-pertussis-tetanus vaccine in a limited children's contigent. Trudy Inst. NIIEM no. 7:248-254 '62 (MIRA 19:1)

754. THE IMPORTANCE OF CONTRAST X-RAY STUDY OF THE TEMPORAL BONE IN CHOLESTEATOMA (Russian text) - Bogdanova T. V. Moscow - VESTN. OTO-RINO-LARING. 1958, 20/3 (40-44) Illus. 2

Contrast roentgenography of cavities of the middle ear with a 40% solution of sergosine enables one to judge the patency of the antral entrance, as well as to assess to what degree the cavity, at the mastoid process, is free of granulations and epidermal accumulations. The possibility of performing roentgenography in any projection is achieved by filling the auditory canal with paraffin. Results of 62 examinations are presented. (XIV, 19*)

BOGDANOVA, T. V., Cand Med Sci -- (diss) "On the problem of cholesteatoma of the middle ear." Mos, 1958. 17 pp (Min of Health RSFSR, Mos Med Stomatological Inst), 200 copies (KL, 17-58, 111)

BOGDANOVA, T.V., kand.med.nauk

Observations on the immediate results of treating laryngeal cancer with dipine. Zhur. ush., nos.i gorl. bol. 21 no.3:38-41 My-Je '61. (MIRA 14:6)

1. Iz klinicheskogo otdela Nauchno-issledovatel'skogo instituta ukha, gorla i nosa Ministerstva zdravookhraneniya RSFSR.
(LARYNX—CANCER) (PIPERAZINE)

BOGDANOVA, T.V.; RADUGIN, K.B.

Use of tympanoplasty in chronic suppurative otitis media.
Trudy gos. nauch.-issl. inst. ukha, gorla i nosa no.11:212-222
'59. (MIRA 15:6)

1. Iz klinicheskogo otdeleniya Gosudarstvennogo nauchno-issledovatel'skogo instituta ukha, gorla i nosa.
(EAR—DISEASES)
(TYMPANAL ORGAN—SURGERY)

BOGDANOVA, V.

Daily variation in the color of meteors. Izv.AN Turk.SSR no.2:92-93 '51. (MLRA 6:8)

1. Fiziko-tekhnicheskii institut Turkmenskogo filiala Akademii nauk SSSR. (Meteors)

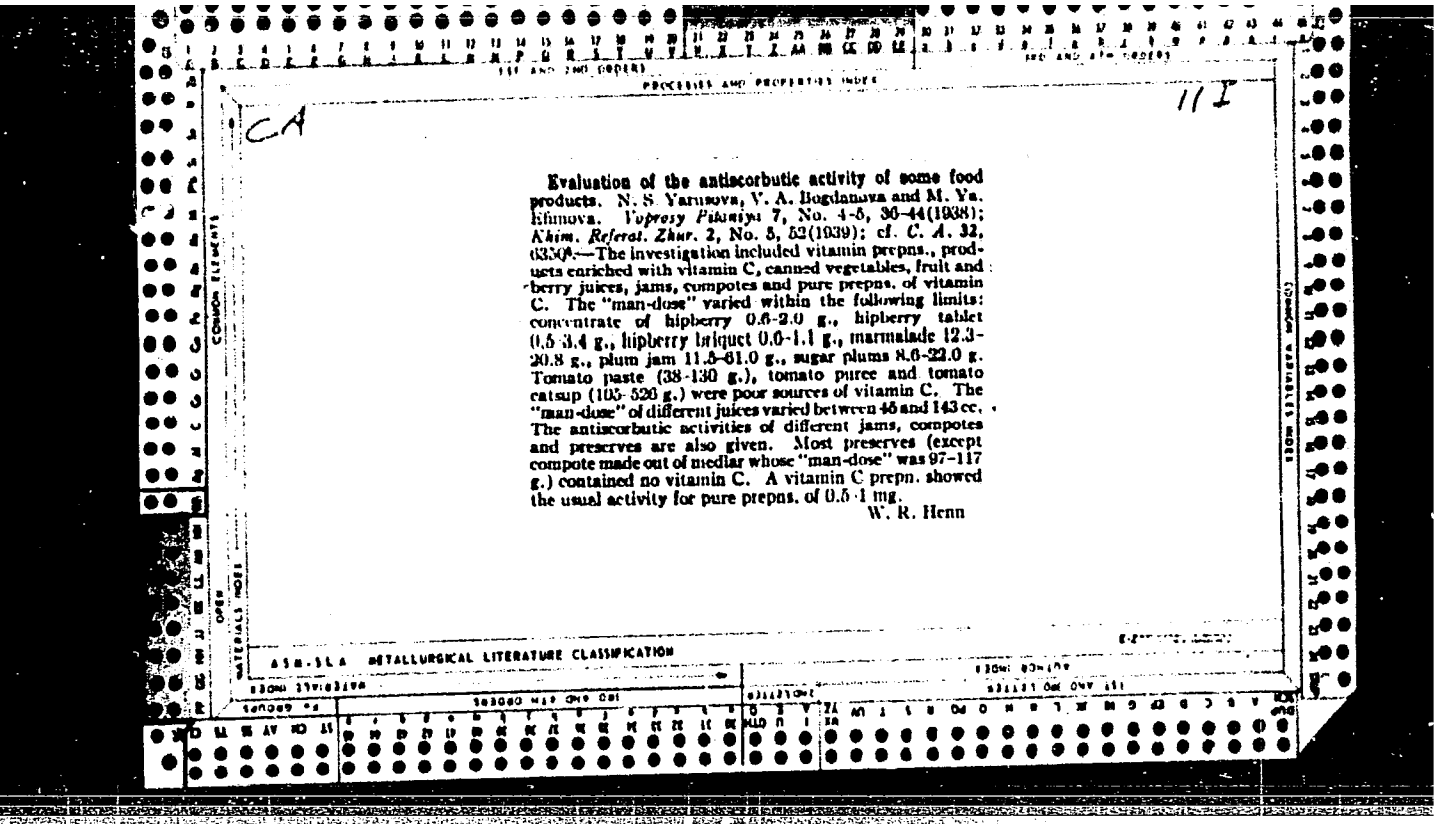
BOGDANOVA, V.A.

Chemical composition of petrolatum obtained from the Karachukhur-Sarakhany petroleum. Izv.vys.ucheb.zav.; neft' i gaz 1 no.9:73-78 '58. (MIRA 11:12)

1. Groznenskiy neftyanov institut.
(Apsheron Peninsula--Hydrocarbons--Analysis)

D'YACHKOV, Ivan Ivanovich; BOGDANOVA, T.Ya., red.; NAGIBIN, P.A., tekhn. red.

[Hero of the winged guards]Bogatyr' krylatoi gvardii; dokumental'nyi ocherk. Alma-Ata, Kazakhskoe gos. izd-vo, 1962. 116 p. (MIRA 16:4)
(Pavlov, Ivan Fomich, 1907-1950)

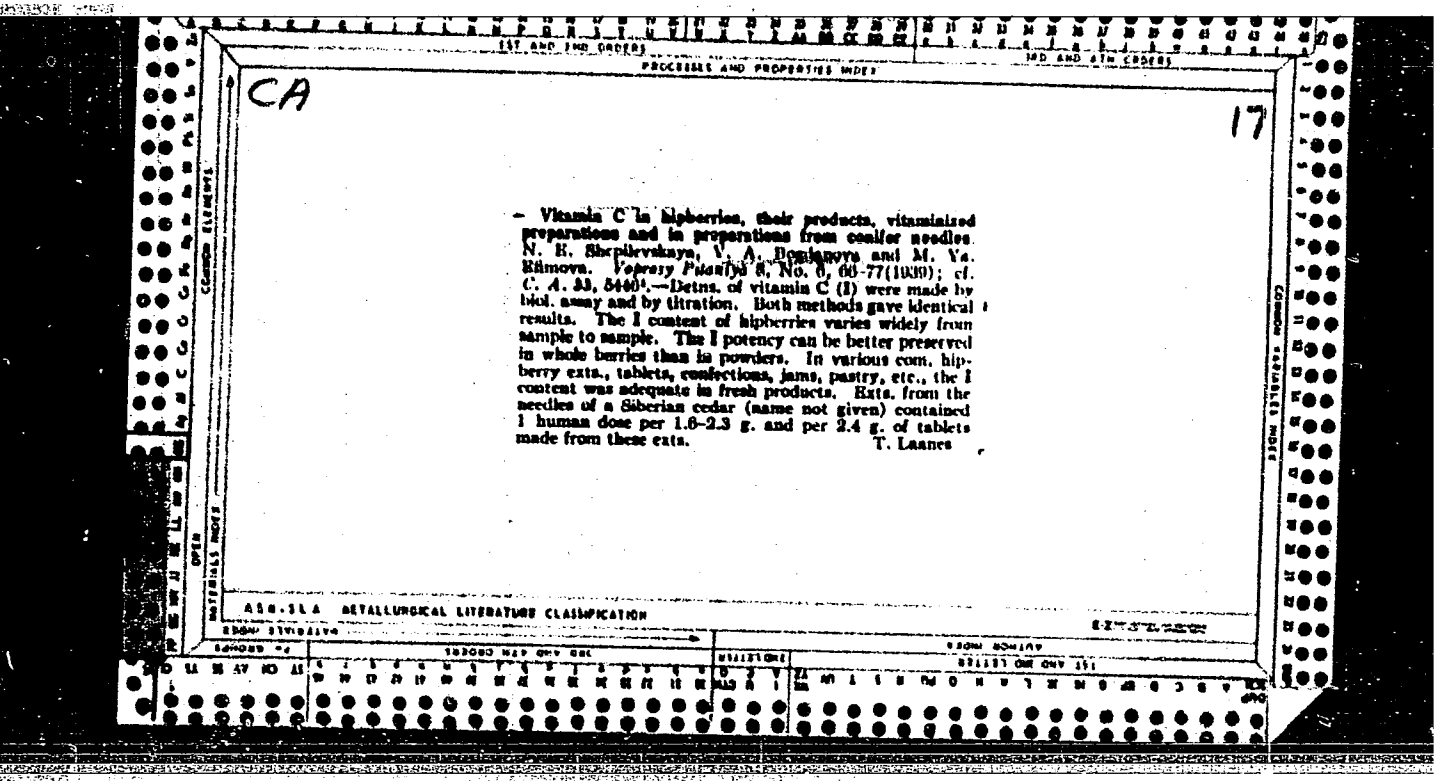


CA

11 I

Evaluation of the antiscorbutic activity of some food products. N. S. Yarusova, V. A. Bogdanova and M. Ya. Efimova. *Vopросy Pitaniya* 7, No. 4-5, 36-44(1938); *Khim. Referat. Zhur.* 2, No. 5, 52(1939); cf. *C. A.* 32, 6350.—The investigation included vitamin prepns., products enriched with vitamin C, canned vegetables, fruit and berry juices, jams, compotes and pure prepns. of vitamin C. The "man-dose" varied within the following limits: concentrate of hipberry 0.6-2.0 g., hipberry tablet 0.5-3.4 g., hipberry briquet 0.6-1.1 g., marmalade 12.3-20.8 g., plum jam 11.5-61.0 g., sugar plums 8.6-22.0 g. Tomato paste (38-130 g.), tomato puree and tomato catsup (105-526 g.) were poor sources of vitamin C. The "man-dose" of different juices varied between 46 and 143 cc. The antiscorbutic activities of different jams, compotes and preserves are also given. Most preserves (except compote made out of medlar whose "man-dose" was 97-117 g.) contained no vitamin C. A vitamin C prepn. showed the usual activity for pure prepns. of 0.5-1 mg.

W. R. Henn

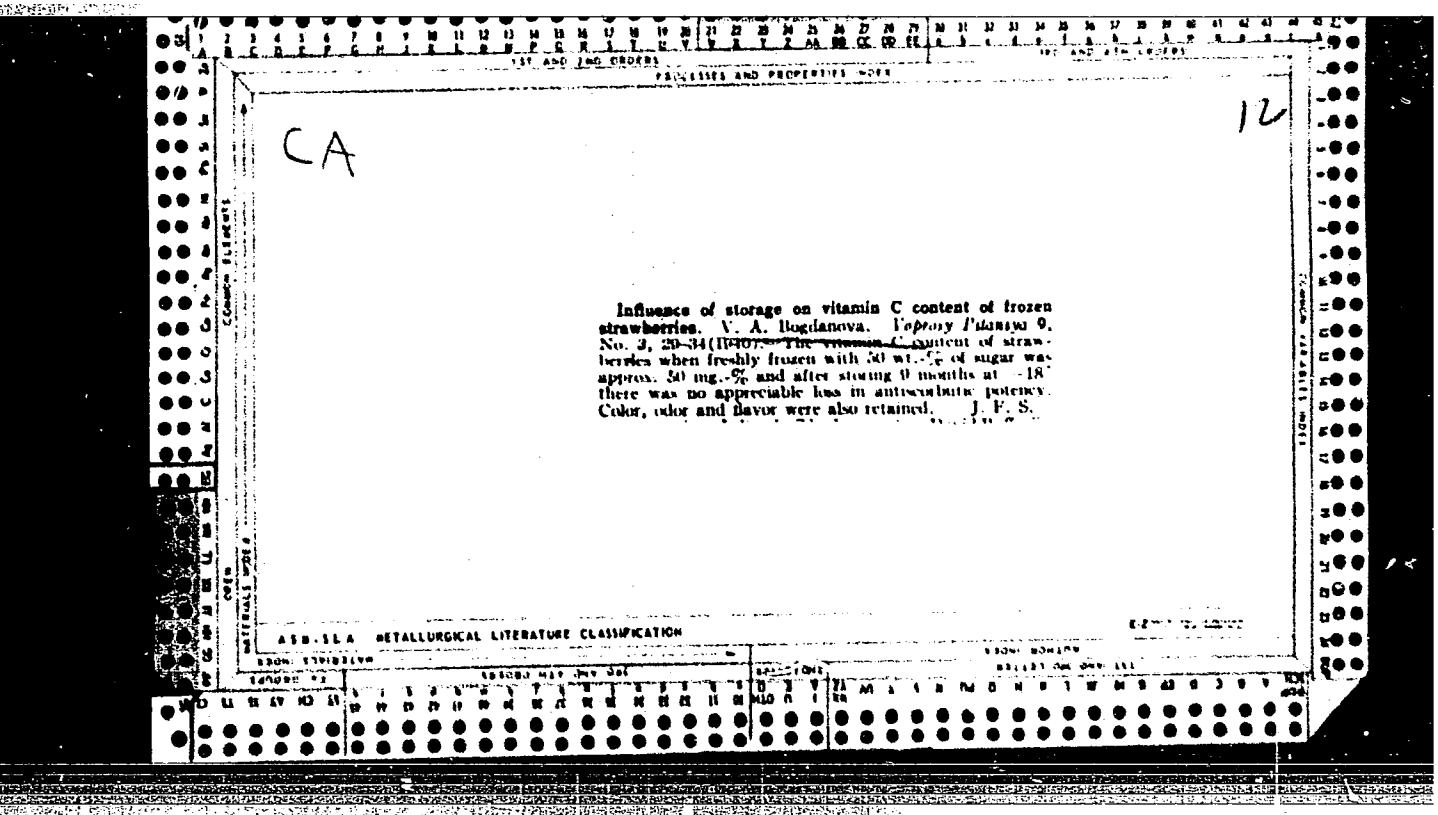


CA

17

– Vitamin C in hipberries, their products, vitaminized preparations and in preparations from conifer needles. N. E. Shcpilevskaya, V. A. Domiganova and M. Ya. Efimova. *Voprosy Pitaniya* 8, No. 6, 66–77(1939); cf. *C. A.* 33, 5460⁵.—Detns. of vitamin C (I) were made by biol. assay and by titration. Both methods gave identical results. The I content of hipberries varies widely from sample to sample. The I potency can be better preserved in whole berries than in powders. In various com. hipberry exts., tablets, confections, jams, pastry, etc., the I content was adequate in fresh products. Exts. from the needles of a Siberian cedar (name not given) contained 1 human dose per 1.6–2.3 g. and per 2.4 g. of tablets made from these exts.

T. Laanes

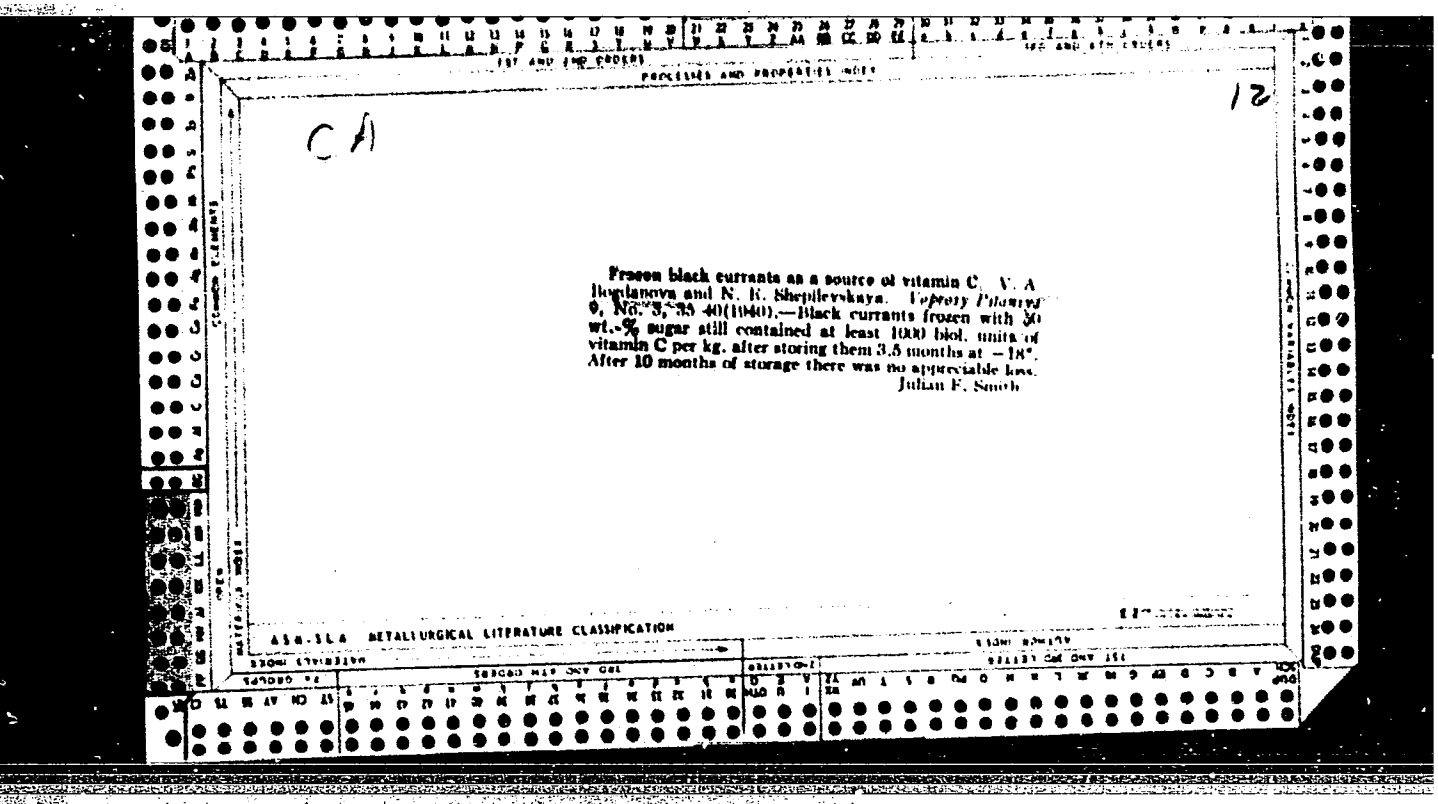


CA

12

Influence of storage on vitamin C content of frozen strawberries. V. A. Bogdanova. *Vopросy Pitaniya* 9, No. 3, 29–34 (1950). The vitamin C content of strawberries when freshly frozen with 50 wt.-% of sugar was approx. 50 mg.-% and after storing 9 months at −18° there was no appreciable loss in antiscorbutic potency. Color, odor and flavor were also retained. J. F. S.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

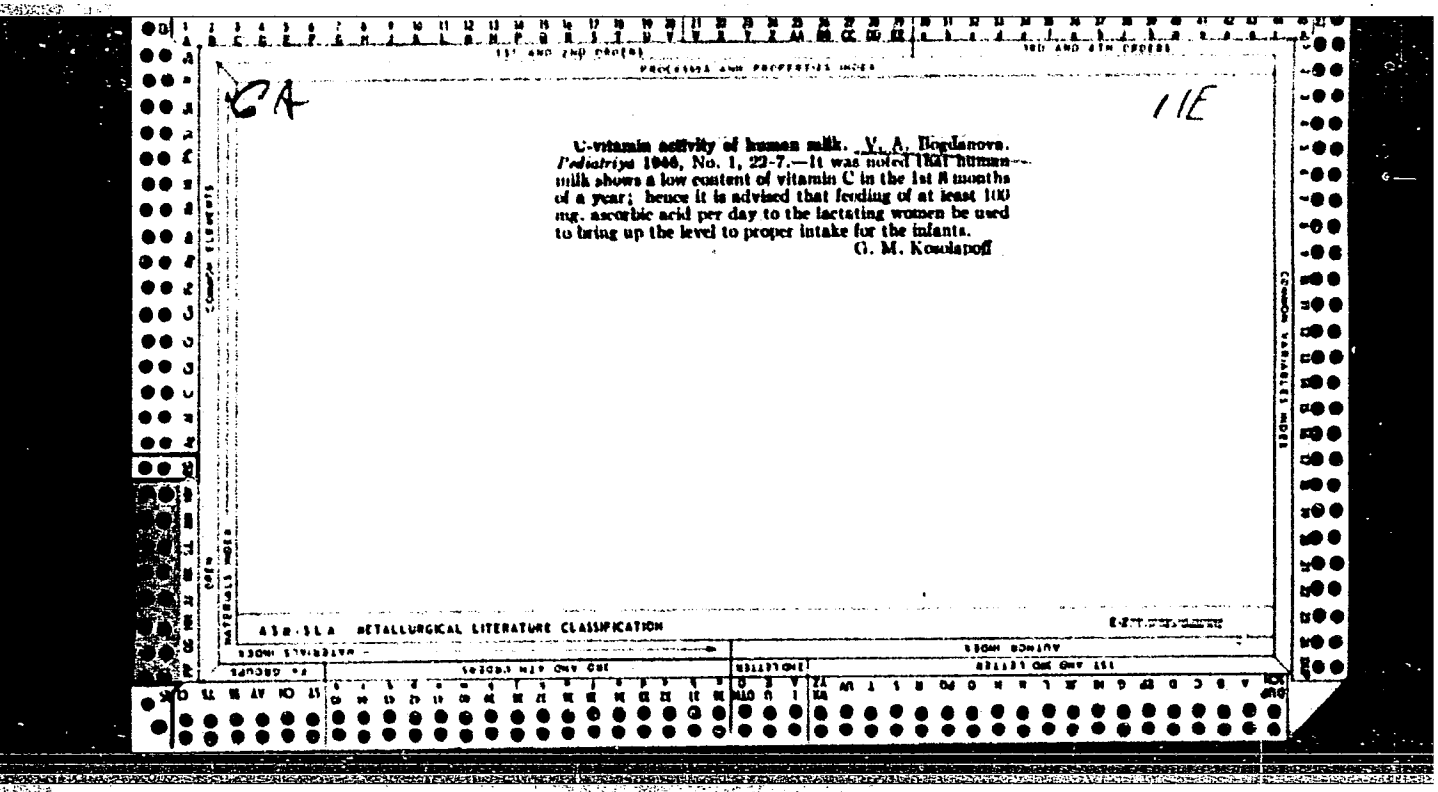


CA

12

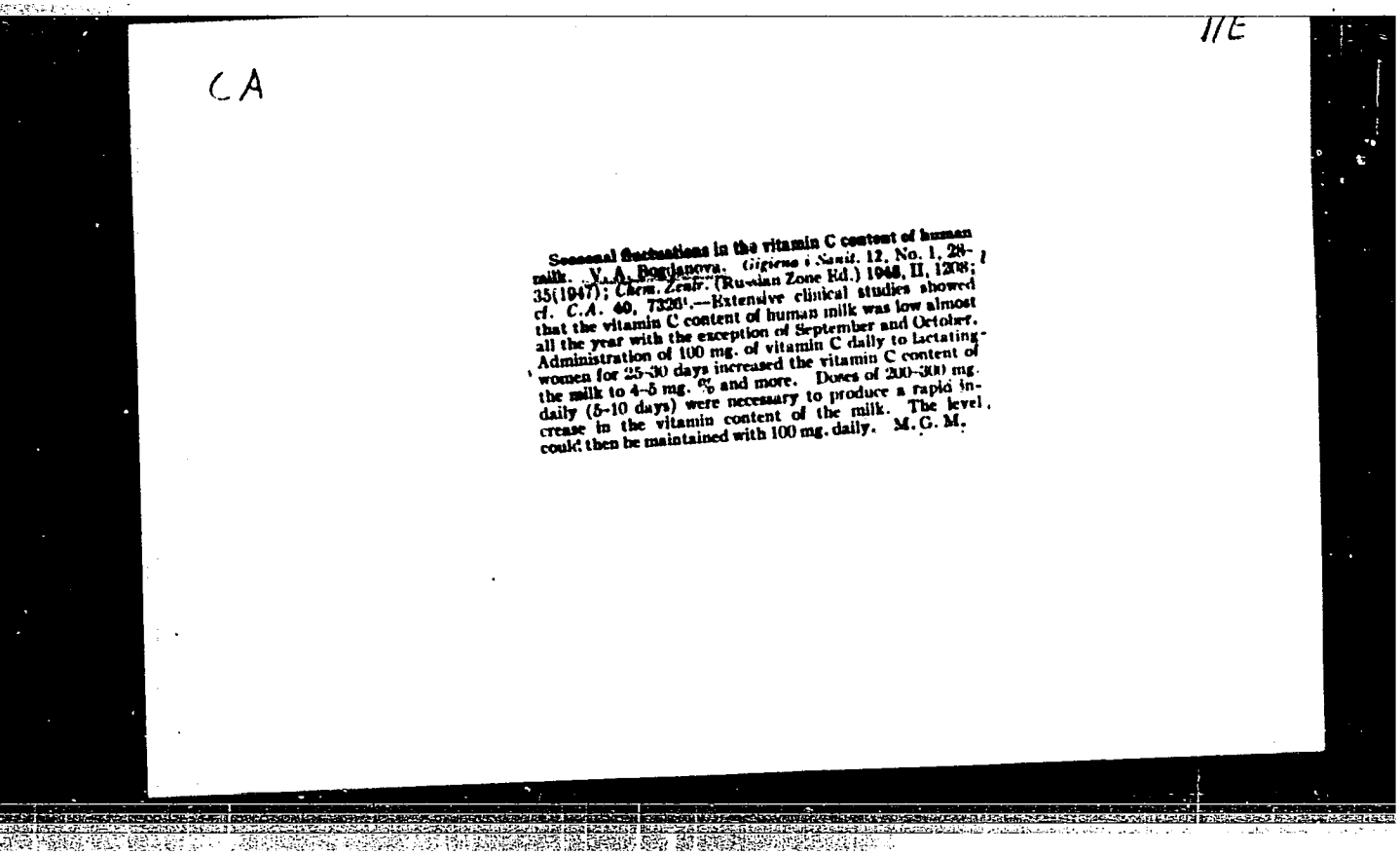
Frozen black currants as a source of vitamin C. V. A. Buglanova and N. E. Shepilevskaya. *Voprosy Pitaniya* 9, No. 3, 35-40(1940).—Black currants frozen with 50 wt.-% sugar still contained at least 1000 biol. units of vitamin C per kg. after storing them 3.5 months at −18°. After 10 months of storage there was no appreciable loss.
Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA 11E

C-vitamin activity of human milk. V. A. Bogdanova. *Pediatriya* 1946, No. 1, 22-7.—It was noted that human milk shows a low content of vitamin C in the 1st 8 months of a year; hence it is advised that feeding of at least 100 mg. ascorbic acid per day to the lactating women be used to bring up the level to proper intake for the infants.
G. M. Kosolapoff



CA

IIE

Seasonal fluctuations in the vitamin C content of human milk. V. A. Bogdanova. *Gigiena i Sanit.* 12, No. 1, 28-35(1947); *Chem. Zentr.* (Russian Zone Ed.) 1948, II, 1208; cf. *C.A.* 40, 7320i.—Extensive clinical studies showed that the vitamin C content of human milk was low almost all the year with the exception of September and October. Administration of 100 mg. of vitamin C daily to lactating women for 25-30 days increased the vitamin C content of the milk to 4-5 mg. % and more. Doses of 200-300 mg. daily (5-10 days) were necessary to produce a rapid increase in the vitamin content of the milk. The level could then be maintained with 100 mg. daily. M. G. M.

BOGDANOVA, V. A.

PA 49/49T86

USSR/Medicine-Vitamin C; Determination of Oct 48
Medicine-Titration, Method

"Use of Potentiometric Titration for Determining Vitamin C," V. A. Bogdanova, State Vitamin Control Sta, Min of Pub Health USSR, 3½ pp

"Gig i San" No 10

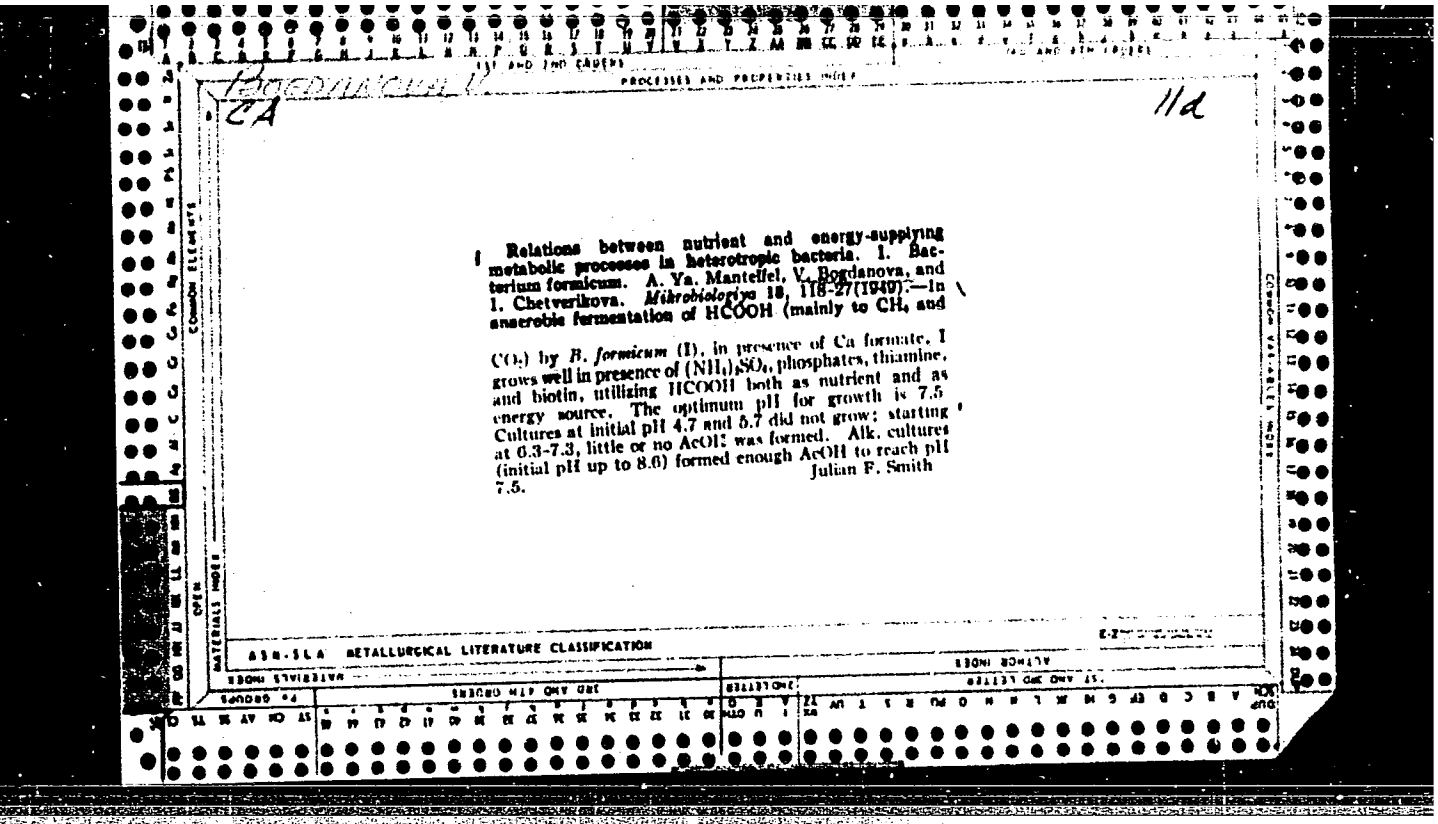
Claims accuracy of a potentiometric determination of Vitamin C in urine, human milk, and in solutions of synthetic ascorbic acid in 1% hydrochloric acid (approximately 0.3 N) lies within the limits of accuracy of the visual method. Concentrated hydrochloric acid, 0.3 - 2.5 N (i.e. 1 - 9%, is a good stabilizer for ascorbic acid,

[redacted] 49/49T86

USSR/Medicine-Vitamin C, Determination of Oct 48
(Contd)

when the latter is a 4 mg % concentrate. Potentiometric method cannot be recommended for general mass analyses. Gives three tables of titration tests.

[redacted] 49/49T86



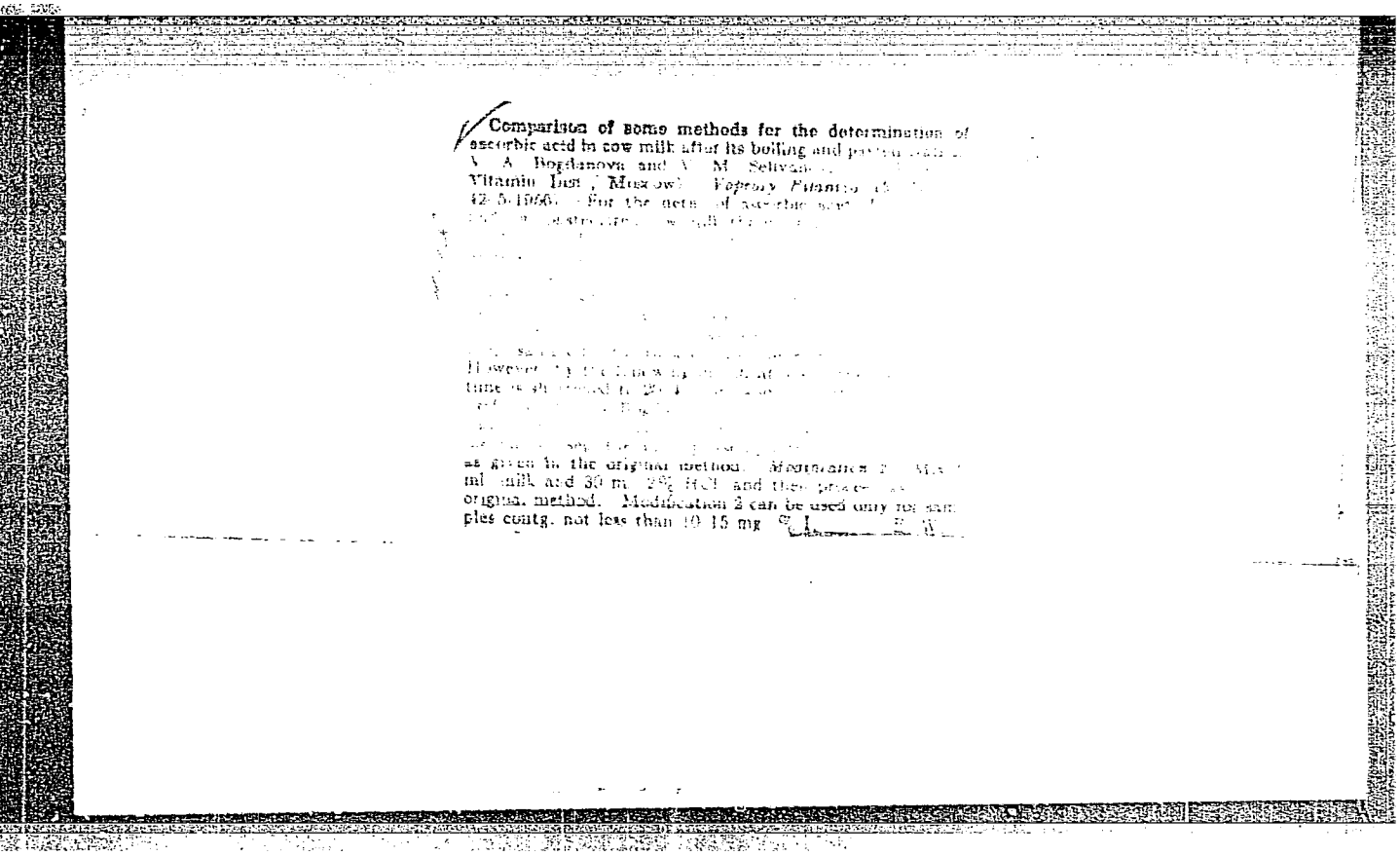
BIOCHEMICAL J.

CA

11d

Relations between nutrient and energy-supplying metabolic processes in heterotropic bacteria. I. Bacterium formicum. A. Ya. Manteifel, V. Bogdanova, and I. Chetverikova. *Mikrobiologiya* 18, 118-27(1949).—In anaerobic fermentation of HCOOH (mainly to CH_4 and CO_2) by *B. formicum* (I), in presence of Ca formate, I grows well in presence of $(NH_4)_2SO_4$, phosphates, thiamine, and biotin, utilizing HCOOH both as nutrient and as energy source. The optimum pH for growth is 7.5. Cultures at initial pH 4.7 and 5.7 did not grow; starting at 6.3-7.3, little or no AcOH was formed. Alk. cultures (initial pH up to 8.6) formed enough AcOH to reach pH 7.5.

Julian F. Smith



Comparison of some methods for the determination of ascorbic acid in cow milk after its boiling and pasteurization

V. A. Bogdanova and V. M. Selivan...

Vitamin Inst., Moscow; *Voprosy Pitaniya* (...

42-5-1956. For the meth... of ascorbic acid...

However, ... time ... as given in the original method. ... ml milk and 30 ml 2% HCl and then ... original method. Modification 2 can be used only for samples contg. not less than 10-15 mg %...

BOGDANOVA, V.A., kandidat biologicheskikh nauk.,; ILYUTOVICH, G.Ye., kandidat meditsinskikh nauk.,; SEDOVA, K.D., kandidat farmatsevticheskikh nauk.,; DYUBYUK, N.Ye., kandidat meditsinskikh nauk.

Advice from "Zdorov'e". Zdorov'e 2 no.3:29-30 Mr '56 (MLRA 9:6)

(MILK, HUMAN) (CRAMPS) (FUNGI--THERAPEUTIC USE)

BOGDANOVA, V.A.; SELIVANOVA, V.M.

Enrichment of cow milk and of kefir with ascorbic acid in children's institutions. Pediatriia 39 no.6:66-68 N-D '56. (MLRA 10:2)

1. Iz otdela vitamina C Instituta vitaminologii Ministerstva zdravookhraneniya SSSR (dir. - prof. B.A.Lavrov)

(MILK,
vitamin C enrichment of milk & kefir for child. nutrition (Rus))
(VITAMIN C,
enrichment of milk & kefir for child nutrition (Rus))

T-2

USSR/Human and Animal Physiology - Metaboslism.

Abs Jour : Ref Zhur - Biol., No 7, 1958, 31434

Author : Bogdanova, V.A., Selivanova, V.M.
Inst : - On last page -
Title : The Relationship Between Daily Dose of Ascorbic Acid in a Ration to Children and the Level of Its Excretion in Morning Urine on an Empty Stomach.

Orig Pub : Vopr. pitaniya, 1957, 16, No 3, 28-31

Abstract : By means of the N.S. Zheleznyakovaya method (Gig, i sanit., 1951, No 12, 41-45) observations were conducted on Children and teenagers 3-16 years which showed that the excretion of vitamin C in urine on an empty stomach indicates its content in the daily food ration. Thus, with a content of 20 mg of ascorbic acid (AA), in the ration, its excretion in urine comprised 0.14-0.19 mg in one hour; with the content of 26-75 mg of AA in the food ration, its excretion in urine increased to 0.19-0.39 mg in 1 hour.

Card 1/2